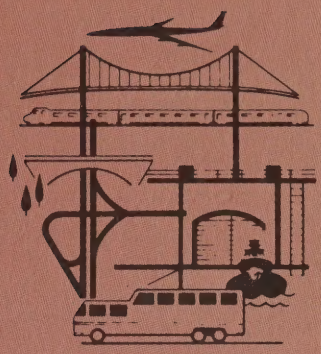
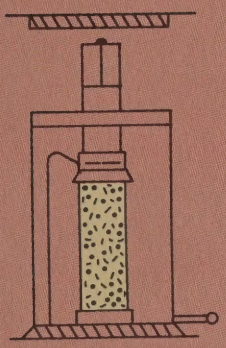
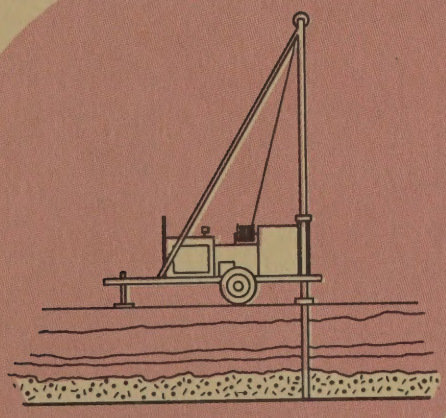
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

RAYMOND T. SCHULER, COMMISSIONER

SOIL MECHANICS
BUREAU







TEST WELL REPORT

CONTRACT CT 73-1

GOVERNOR THOMAS E. DEWEY THRUWAY
NEW YORK DIVISION
HARRIMAN TOLL BARRIER
ORANGE COUNTY

NOVEMBER 1973

SM 238b (1/73)

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE November 12, 1973

SUBJECT CT 73-1, NEW YORK STATE THRUWAY, HARRIMAN TOLL BARRIER
ORANGE COUNTY, PIN 8750.59-301
WATER WELL REPORT

FROM L. H. Moore, Soil Mechanics Bureau, Room 102, Bldg. 7
By: W. P. Moody W P Moody

TO M. N. Sinacori, Regional Director, Region 8

CC J. Sternbach, Construction Subdivision, Room 406, Bldg. 5
T. Gregory, New York State Thruway Authority

Attached please find one copy of a water well report prepared by Mr. Vance Bryant, Senior Engineering Geologist of this Bureau, concerning the well progressed for the subject project.

Please contact this Bureau if you have any questions concerning this report.

WPM:RSG:SAS
Encl.

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE November 12, 1973

SUBJECT CT 73-1
GOVERNOR THOMAS E. DEWEY THRUWAY, HARRIMAN TOLL BARRIER
ORANGE COUNTY, PIN 8750.59 301

FROM V. Bryant, Senior Engineering Geologist

TO W. P. Moody, Associate Soils Engineer

From August 29, 1973 at the inception of drilling, to October 16, 1973 at the cessation of pumping, the writer has assisted Mr. L. DuBois (EIC) inspect the construction of a water well on the subject contract. The inspection was made at the request of Mr. G. Greenslade (former EIC) and followed a preconstruction meeting held on August 2, 1973 at which time details of the well specification were reviewed.

Drilling of the test well commenced on August 29th and was progressed through approximately fifty feet of glacial till. Two to three feet of water bearing sand and gravel was then penetrated and was in turn followed by alternating layers of sand, gravel and cobbles along with brown silt and clay to a depth of 81 feet where bedrock was encountered.

Preliminary testing indicated that an insufficient yield would be obtained from the waterbearing sand and gravel. The presence of silt and clay and only a minor amount of water in the material between fifty-two and eighty-one feet convinced the writer that this material would not be conducive to development as a screened aquifer. The writer therefore recommended progressing the well into rock. This opinion and recommendation was conveyed to Mr. DuBois, and Mr. Sells the Resident Engineer for Madigan-Praeger, Contracting Engineers. In addition, the writer discussed the situation with Messrs. R. Sullivan (Senior and Junior) of R. E. Chapman Co., Subcontractor for the water well, on September 13, 1973. The subcontractor decided to attempt to gravel pack and screen that portion of the well between fifty and fifty-five feet. To accomplish this, the hole was backfilled to depth of fifty-five feet. On September 18, the screen and pack were placed and development was attempted. On September 21 this attempt was abandoned when an insufficient quantity of water was obtained (2-3 G.P.M.).

On September 27 a rotary drill rig was brought to the job to replace the cable tool rig. Drilling was progressed through weathered and fractured rock from a depth of eighty-one feet, to a depth of one-hundred and four feet. One hundred and six feet of six inch diameter casing was placed and drilling continued. On October 2, with the depth of the well at two hundred and sixty-three feet, a check was made of the yield of the well. Indications were that a yield of ten to twelve gallons per minute would be obtained from the well. Drilling was therefore terminated.

On October 15 the test pump was placed and the well disinfected in accordance with the specification. The pump test was conducted the next day at a rate of twelve gallons per minute. Water samples were collected at the end of the test period and were submitted to the New York State Department of Health for quality testing on October 17, 1973.

Laboratory test results were received on October 29, 1973 (Bacteriological) and November 1973 (Physical and Chemical - Interim Report). The test results are included as a part of this report. In addition, copies of the test results have been forwarded by Mr. DuBois to the Orange County Health Department for their interpretation and an evaluation of the source as a potable water supply.

VB:mpe

GOVERNOR THOMAS E. DEWEY THRUWAY
NEW YORK DIVISION
HARRIMAN TOLL BARRIER

LOCATION

Centerline Station: 870+00
Offset: 134 feet right
Top of 6 Inch Casing Elevation: 542±
Ground Elevation During Drilling: 539±

DRILLING DATA

Subcontractor: R. E. Chapman Co.
Drillers: Bill Cummings, Ed Cislak and Joe Kirby
Method: Cable tool and rotary
Date Started: 8/29/73
Date Completed: 10/2/73

WELL DATA - Depths referenced to original ground during drilling

Source of Water: Bedrock
Overburden: Glacial Till and Granular Deposits
Depth to Rock: 81 feet
Water Locations: 143 feet and 203 to 263 feet
Static Level During Drilling: Variable
Depth of Well: 263 feet

TEST DATA - Depths referenced to original ground during drilling

Date Started: 10/16/73
Date Completed: 10/16/73
Location of Pump Intake: 233 feet
Static Level at Start of Test: 18 feet
Yield: 12 G.P.M.
Drawdown: 85 feet

PUMP DATA

Make & Type: Jacuzzi submersible - Model 15S4C-A

NEW YORK DIVISION
HARRIMAN TOLL BARRIER

WELL LOG	WELL DETAILS
	3 Ft. — Top of 6 inch casing
	1 Ft. — Top of 10 inch casing
Regraded Fill 0 to 5 Ft.	Ground Elevation During Drilling
Brown Till 5 to 13 Ft.	
Variable Till 13 to 18 Ft.	Static Level at Start of Test - 18 Ft.
Gray Till 18 to 49 Ft.	
(Very Gritty 39 to 49 Ft.)	
Sand & Gravel (Water) 49 to 51 Ft.	Bottom of 10 inch casing - 50 Ft.
Silt, Sand and Gravel with Brown Clay Layers 51 to 71 Ft.	
Dolomite Boulder 71 to 74 Ft.	
74 to 81 Ft. (See 51 to 71 Ft.)	
Top of Rock	
Brown and Gray Weathered and Fractured Dolomite 81 to 104 Ft.	Dynamic Level at 12 G.P.M. - 103 Ft.
	Bottom of 6 inch casing - 104 Ft.
	Dynamic Level (?) at 25 G.P.M. - 208 Ft.
Gray Dolomite 104 to 263 Ft.	Pump Intake During Test - 233 Ft.
	Bottom of Well - 263 Ft.

Note change in scale above and below ground elevation during drilling.

GOVERNOR THOMAS E. DEWEY THRUWAY
NEW YORK DIVISION
HARRIMAN TOLL BARRIER

PUMP TEST

*Static Level at Start of Test - 18 Feet
*Pump Intake Level During Test - 233 Feet

Date	Time	Rate (GPM)	Dynamic Level (Feet)*	Drawdown (Feet)	Comments
10/16/73	3:30 AM	25	208**	190	-
	6:00 AM	25	?	?	-
	6:00 AM	12	120	102	Closed Valve
	8:00 AM	12	103	85	Water Clear
	10:00 AM	12	103	85	Water Clear
	12:00 PM	12	103	85	Water Clear
	2:00 PM	12	103	85	Water Clear
	2:08 PM	--	-	-	Took Samples End Pumping
	2:10 PM	--	58	40	Recovery
	3:05 PM	--	24(+)	6(+)	Recovery
	4:40 PM	--	21(+)	3(+)	End Test

*Levels referenced to ground elevation during drilling.

**Reported on well drillers log. Further substantiating measurements unavailable. Information not sufficient for recommendation at a pumping rate greater than 12 G.P.M.

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

REPORTING LAB: 01 CENTRAL AVE. LAB
LAB ACCESSION NO: 15162 YR/MO/DAY/HR SAMPLE REC'D: 73/10/17/11
PROGRAM: 810 N.Y.S. THRUWAY WATER SUPPLY
STATION (SOURCE) NO:
DRAINAGE BASIN: NY GAZETTEER NO: 3530 COUNTY: ORANGE
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: T HARRIMAN, NYS THRUWAY TOLL BARRIER

EXACT SAMPLING POINT: OUTLET OF PIPE FROM TEST PUMP
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/16/14
REPORT SENT TO: CO (1) RO (0) LPHE (0) LHO (2) FED (0)

PARAMETER		UNIT	RESULT	NOTATION
026800	STAND PLATE COUNT COL/ML.		11.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 10/19/73

SUBMITTED BY: BRYANT

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

INTERIM REPORT INTERIM REPORT INTERIM REPORT

RESULTS OF EXAMINATION
(PAGE 1 OF1)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 5932 YR/MO/DAY/HR SAMPLE REC'D: 73 /10 /17 /11
PROGRAM: 810
STATION (SOURCE) NO:
DRAINAGE BASIN: 13 NY GAZETTEER NO: 3530 COUNTY: Orange
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: NY State Thruway Toll Barrier Exit 16 Harriman

EXACT SAMPLING POINT: New Construction, Outlet of Pipe From Test Pump
TYPE OF SAMPLE:
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 10/16 14
REPORT SENT TO: CO ( ) RO ( ) LPHE ( ) LHO ( ) FED ( )

PARAMETER		UNIT	RESULT	NOTATION
000100	COLOR (APPARENT)		✓ 0.	
000200	TURBIDITY J.T.U.		✓ 0.25	
000300	ODOR, HOT		✓ 1.0044	
000501	AMMONIA NITROGEN AS N	MG/L	0.02	LT
000601	ALBUMINOID NITROGEN AS N	MG/L	0.02	
000709	NITRITE NITROGEN AS N	MCG/L	3.	
000801	NITRATE NITROGEN AS N	MG/L	0.1	LT
000901	OXYGEN CONSUMED	MG/L	0.9	
001001	CHLORIDES	MG/L	3.0	RESULT TO FOLLOW
001101	HARDNESS, TOTAL AS CACO3	MG/L	120.	
001501	ALKALINITY, MTH OR AS CACO3	MG/L	98.	
001900	PH (LABORATORY)		8.0	
010001	IRON	MG/L	✓ 0.04	
010201	MANGANESE	MG/L	✓ 0.02	LT
010701	SODIUM	MG/L	✓ 1.5	
100300	ODOR, COLD		✓ 1.0044	

DATE COMPLETED: 10 /30/73

ATTENTION OF: V. BRYANT